

Water Board's Role and Authority in Managing the Discharge of Salts to Groundwater

Item No. 4

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Purpose

Discuss the regulatory review process of a potential discharge of waste and the factors that are considered to ensure the discharge complies with the State's Anti Degradation Policy

Agenda

- Purpose
- State Anti-degradation Policy
- Environmental Factors - Assimilative Capacity
- TDS Secondary Water Quality Standard
- Best Practicable Treatment or Control
- Public Interest
- Challenges

State Antidegradation Policy

SWRCB Resolution 68-16

Statement of Policy with Respect to Maintaining High Quality of Waters in California

- Incorporates the federal policy when it would be applicable
- Applies to discharges to waters of the State (surface water and groundwater) as well as remediation projects (SWRCB Resolution 92-49)

State Antidegradation Policy

- I. “High quality water” must be maintained, unless it is demonstrated to the State that any change will
 - Be consistent with the maximum benefit to the people of the state,
 - Not unreasonably affect beneficial uses, and
 - Not result in water quality less than that prescribed by Water Quality Control Plans (water quality objectives and beneficial uses)

State Antidegradation Policy

- II. Any discharge to “high quality waters” must comply with waste discharge requirements that require “best practicable treatment or control” necessary to ensure
- no pollution or nuisance, and
 - that the highest quality water consistent with the maximum benefit to the people of the state will be maintained

State Antidegradation Policy

- “High quality waters” = waters with existing quality better than that necessary to protect present and anticipated beneficial uses
- Waters may be “high quality” for some constituents or beneficial uses, or in some segments or portions of the aquifer, but not others

State Antidegradation Policy

“Maximum benefit to the people of the state”

Case-by-case determination that considers:

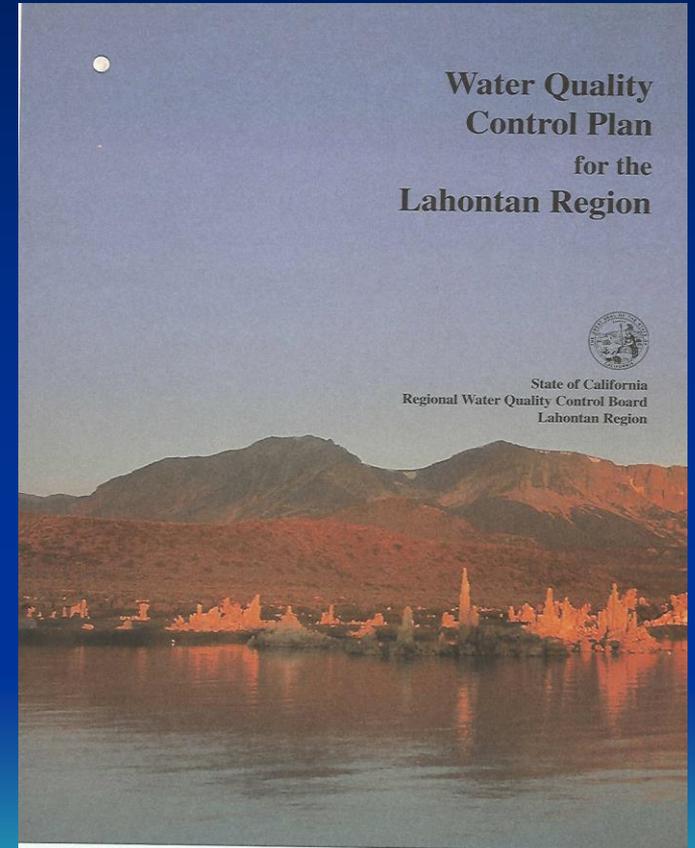
1. Beneficial uses of receiving waters
2. Environmental factors
 - Assimilative Capacity
3. Feasible alternative treatment or control methods
4. Economic and social costs and benefits associated with the discharge (both for the discharger and the public)
 - Cost savings to the discharger by themselves not enough

When is an Anti Deg Analysis Required for a Proposed Discharge?

- **Simple Anti-Deg Analysis when Degradation is:**
 - Spatially localized
 - Temporally limited
 - Results in a minor change in water quality
 - Evaluated sufficiently through CEQA
- **Complex Anti-Deg Analysis when there is:**
 - Substantial increase in mass of pollutant
 - Mortality or significant growth or reproductive impairment
 - New discharge requiring issuance of WDRs
 - There is a material or substantial alteration to a facility

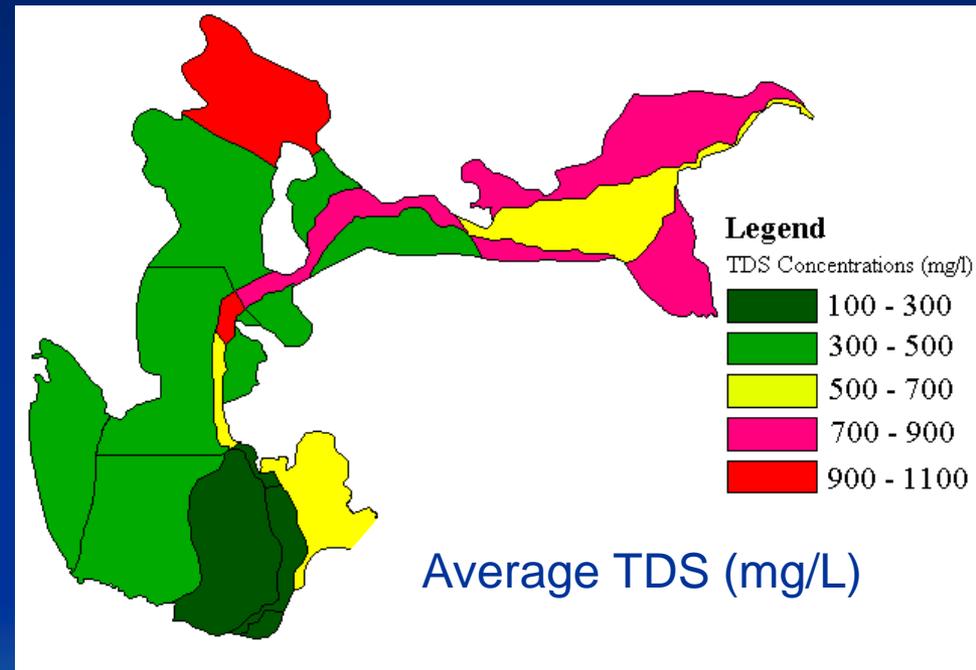
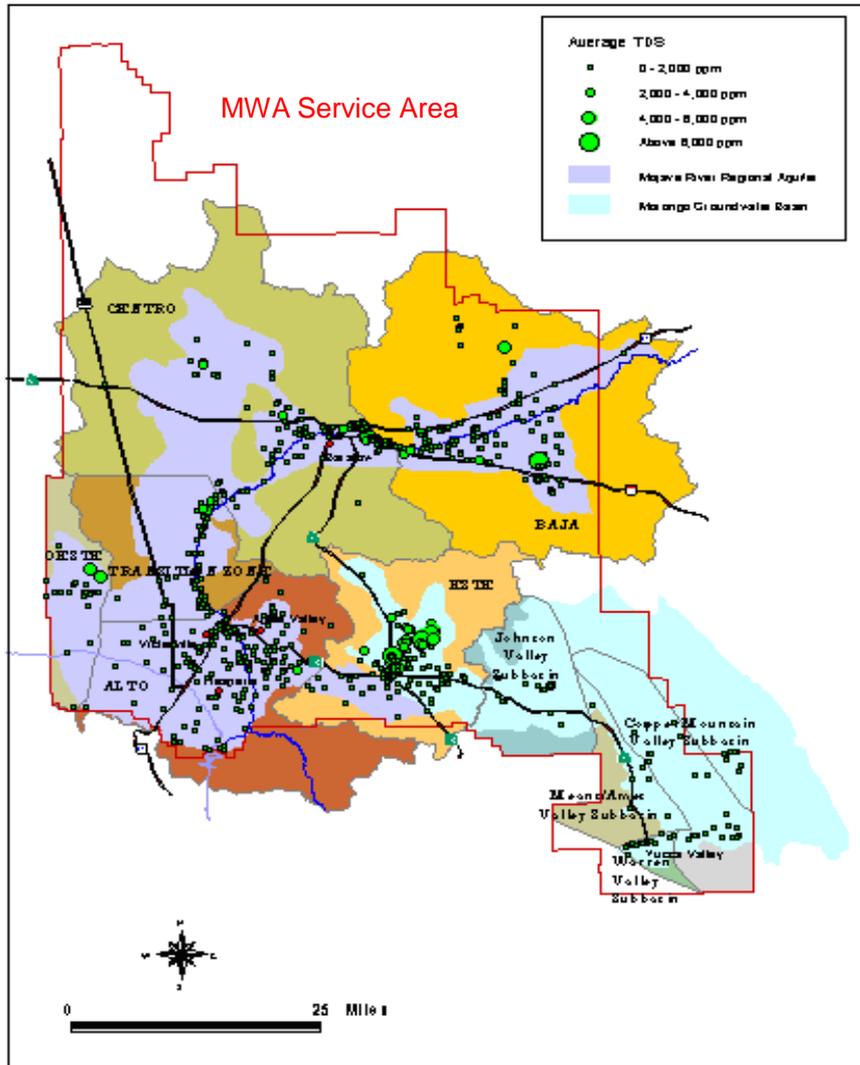
Beneficial Uses Factor

- Basin Plan identifies specific beneficial uses for individual ground and surface water bodies
 - 22 Beneficial Uses
 - MUN designation = municipal and domestic drinking water supply
 - Applies to 344 of 345 groundwater basins
- Identifies specific water quality objectives to protect beneficial uses



<http://www.waterboards.ca.gov/lahontan/>

Environmental Factors

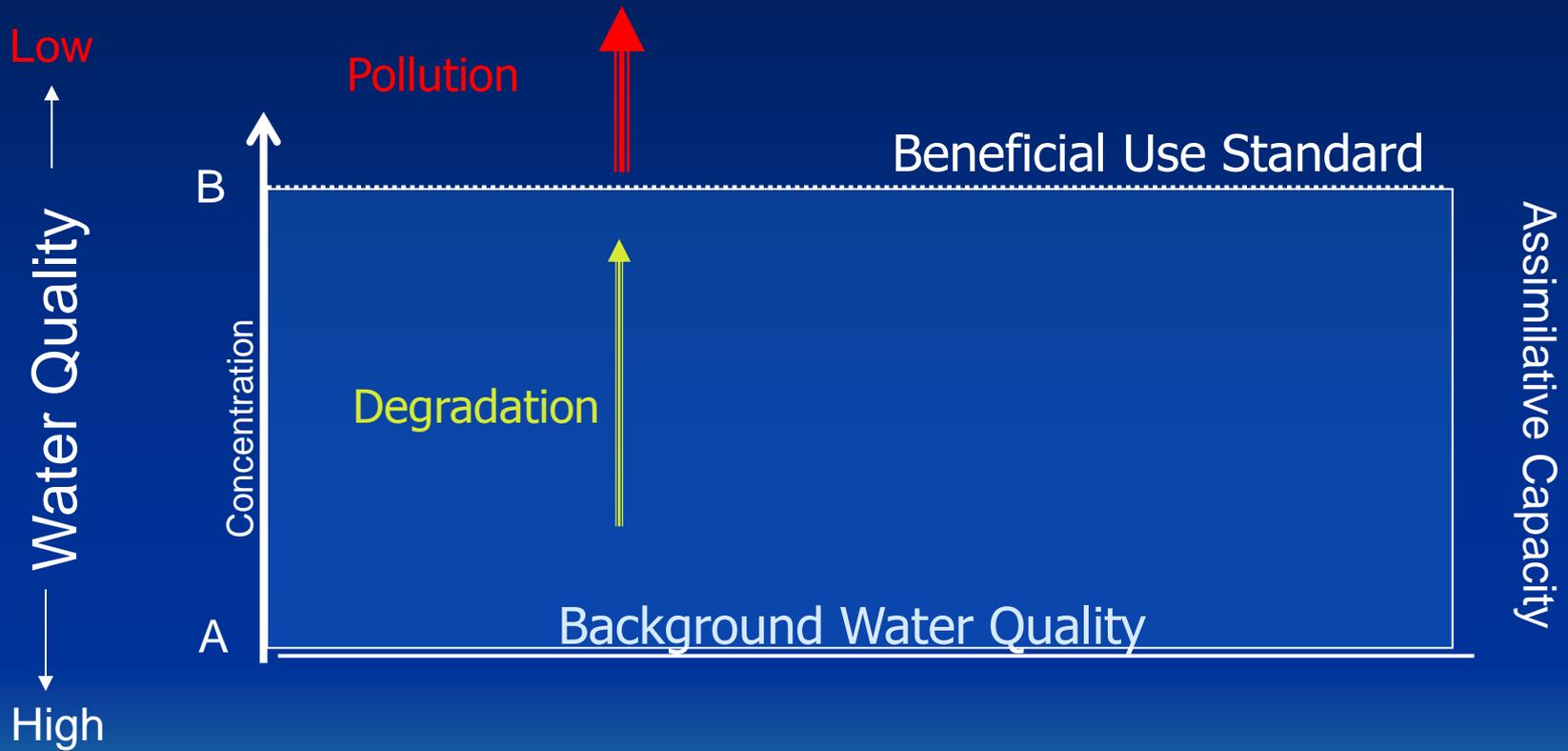


Source: Mojave Water Agency

Assimilative Capacity

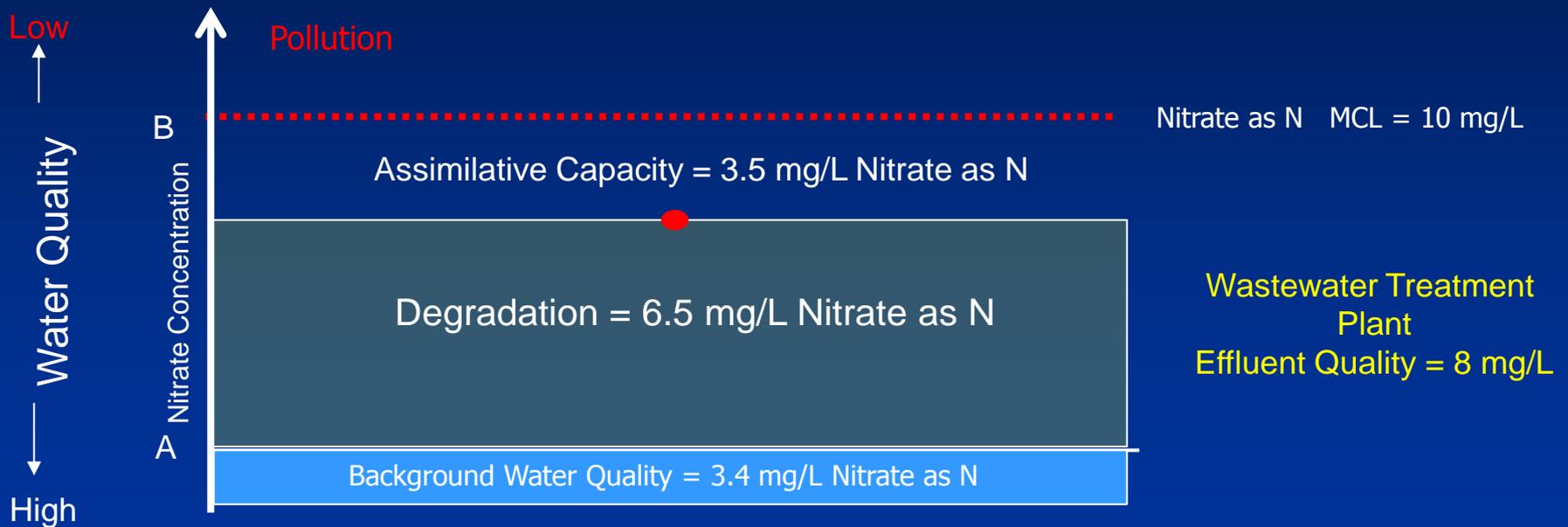
The ability of a water body to receive and accommodate both natural and anthropogenic sources of pollutants while maintaining the beneficial uses assigned to it.

Consideration of Assimilative Capacity



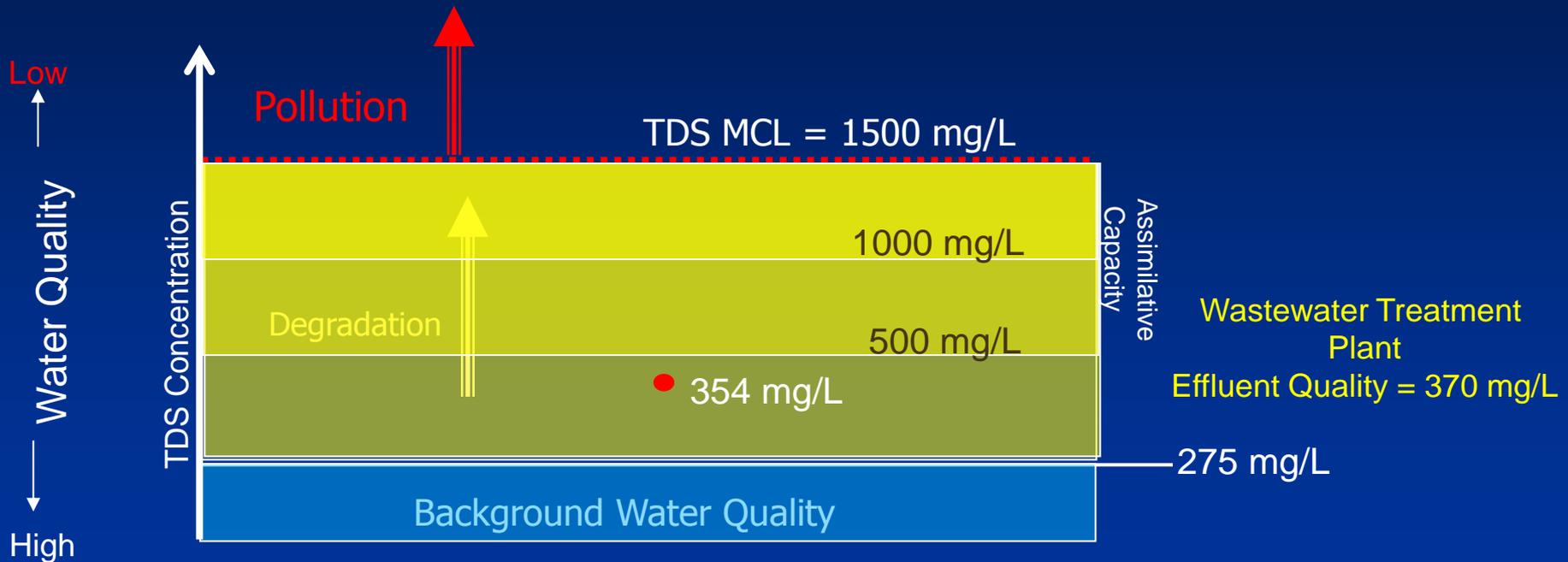
Anti Degradation Finding - Nitrate

(Enclosure 2)



- Membrane Bio Reactor (MBR) Treatment
- Degradation limited to ½ mile from discharge point
- No other known or foreseeable demands on the assimilative capacity
- Maximum benefit to the people of the State

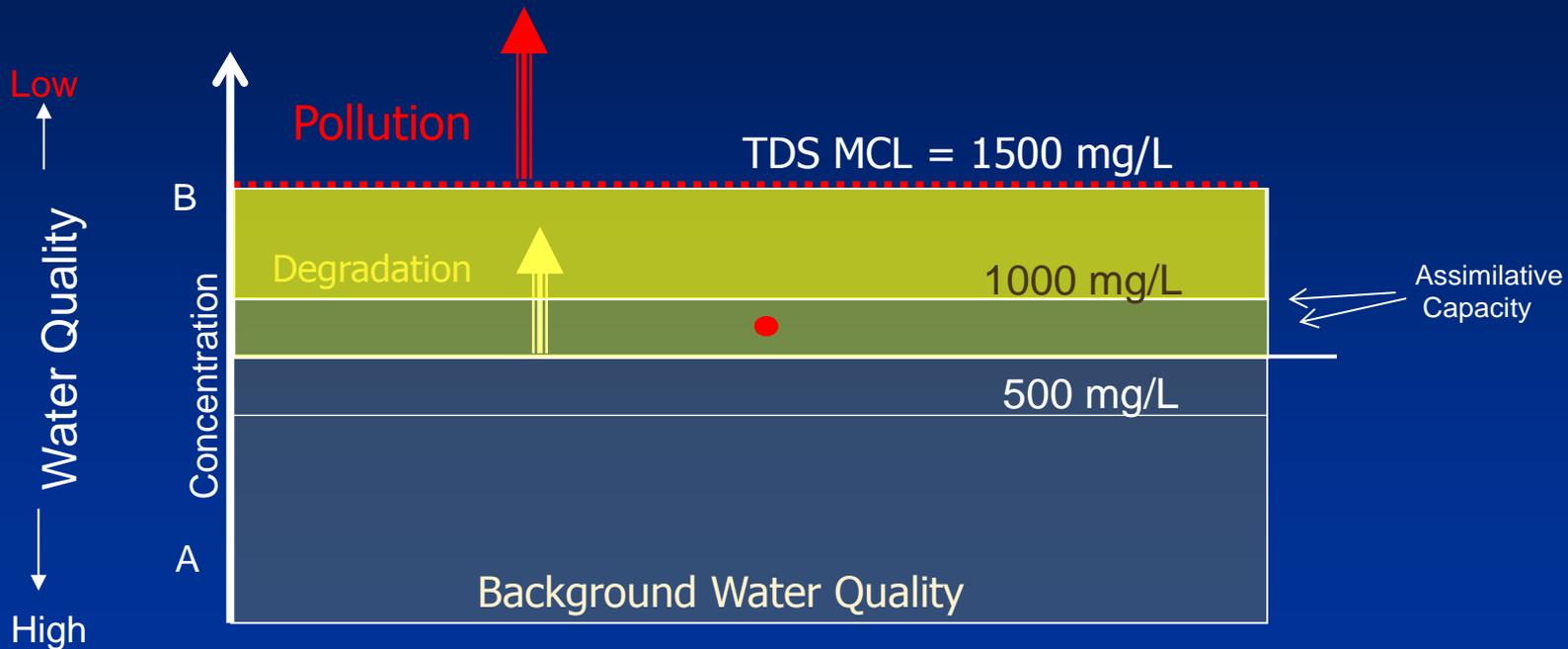
Total Dissolved Solids



TDS Three Part Secondary Standard

- Based on Taste and Odor
- 500, 1000 (recommended upper level), and 1500 mg/L (short term)
- “For naturally high quality waters, taste and odor shall not be altered”
 - Lahontan Basin Plan

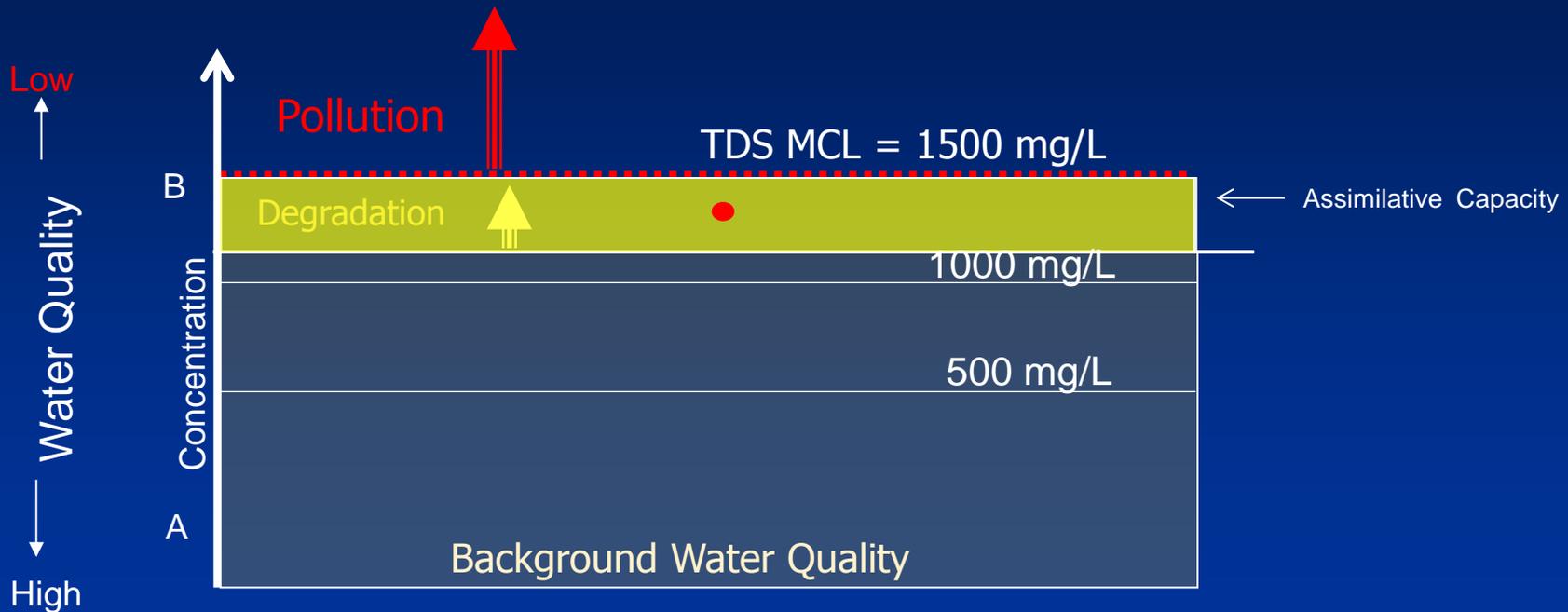
Total Dissolved Solids



TDS Three Part Secondary Standard

- Taste and Odor
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Total Dissolved Solids



TDS Three Part Secondary Standard

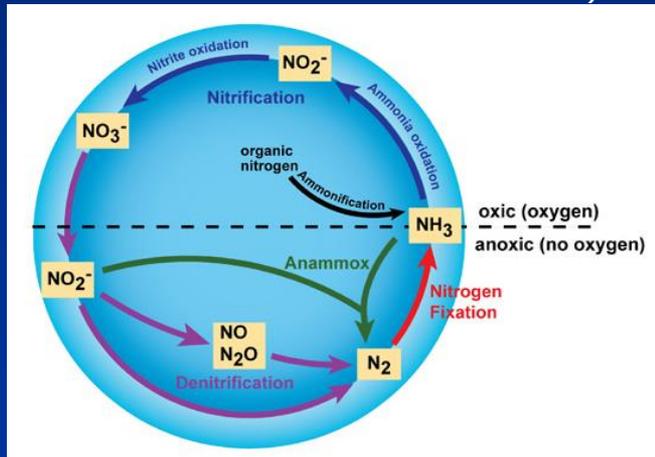
- Taste and Odor
- 500, 1000, and 1500 mg/L

Best Practicable Treatment or Control (BPTC)

- Technology
- Performance
- Cost

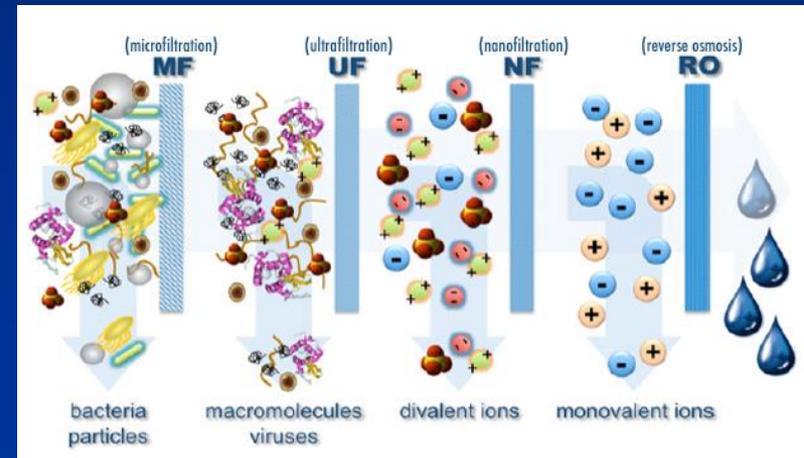
Nitrogen Reduction

(Nitrification > De-nitrification)



Total Dissolved Solids Reduction

(Advanced Filtration)



Public Interest Factor

Socio-economic issues include:

- Increases in employment or wages
- Increased production
- Improved community tax base
- Housing
- Correction of environmental or public health problems
- Decrease in expenditures for social services

Challenges

- Economic and social development analyses require specific skillsets
- Sub basin-wide understanding of baseline water quality
 - Use of USGS, Discharger, and SNMP data
- Application of the TDS three part taste and odor water quality objective
- Long-term cumulative impact of multiple demands on sub basin assimilative capacity

Questions